

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
25 January 2001 (25.01.2001)

PCT

(10) International Publication Number  
**WO 01/05424 A2**

- (51) International Patent Classification<sup>7</sup>: **A61K 39/00**
- (21) International Application Number: **PCT/CA00/00811**
- (22) International Filing Date: **11 July 2000 (11.07.2000)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:  
**09/353,617** **15 July 1999 (15.07.1999)** **US**
- (71) Applicant (for all designated States except US): **CON-NAUGHT LABORATORIES LIMITED [CA/CA]; 1755 Steeles Avenue West, Toronto, Ontario M2R 3T4 (CA).**
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **LOOSMORE, Sheena, M. [CA/CA]; 70 Crawford Rose Drive, Aurora, Ontario L4G 4R4 (CA). YANG, Yan-Ping [CA/CA]; Apartment 1803, 35 Empress Avenue, Toronto, Ontario M2N 6T3 (CA). KLEIN, Michel, H. [CA/CA]; 16 Munro Boulevard, Toronto, Ontario M2P 1B9 (CA). SASAKI, Ken [JP/CA]; Apartment 512, 1131 Steeles Avenue West, Toronto, Ontario M2R 3W8 (CA).**
- (74) Agent: **STEWART, Michael, I.; Sim & McBurney, 6th Floor, 330 University Avenue, Toronto, Ontario M5G 1R7 (CA).**
- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.**
- (84) Designated States (regional): **ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).**
- Published:**  
— *Without international search report and to be republished upon receipt of that report.*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **MULTI-COMPONENT VACCINE TO PROTECT AGAINST DISEASE CAUSED BY HAEMOPHILUS INFLUENZAE AND MORAXELLA CATARRHALIS**

(57) Abstract: A multi-valent immunogenic composition confers protection on an immunized host against infection caused by both *Haemophilus influenzae* and *Moraxella catarrhalis*. Such composition comprises at least four antigens comprising at least one antigen from *Haemophilus influenzae*, and at least one antigen from *Moraxella catarrhalis*. Three of the antigens are adhesins. High molecular weight (HMW) proteins and *Haemophilus influenzae* adhesin (Hia) proteins of non-typeable *Haemophilus* and a 200 kDa outer membrane protein of *Moraxella catarrhalis* comprise the adhesin components while the other antigen is a non-proteolytic analog of Hin47 protein. Each component does not impair the immunogenicity of the others. The multi-valent immunogenic composition may be combined with DTP component vaccines, which may also include non-virulent poliovirus and PRP-T, to provide a component vaccine without impairment of the immunogenic properties of the other antigens.

WO 01/05424 A2